SPECTRUM CERTIFICATION PROCESS

Paul Robbins

STAGE ONE (CONCEPTUAL) SYSTEM REVIEW DATA REQUIREMENTS

BACKGROUND: Certification of spectrum support at Stage 1 provides guidance on feasibility of obtaining certification at subsequent stages i.e., 2, 3 and 4. Guidance from NTIA will indicate suitability of proposed bands, power, bandwidth etc. at an early stage in system development. For example, if a project has specific frequency bands that it wishes to radiate in, but are not sure that the NTIA will certify in the required bands, we can request that the NTIA review and make band decisions. JPL has obtained Stage 1 certification for the ATOMS project in this manner. Timeline for submission of a Stage 1 can be as early as 5-6 years from operation, or in the case of a spacecraft or satellite, actual launch. The NTIA can complete its review in as little as 4-6 months depending on complexity of the system. It must be noted that no frequency authorizations will be issued by the NTIA if the system review process has not been completed for the stage of review required by the user.

JPL Spectrum Management Responsibilities

Obtain technical data from the project and prepare the review in accordance with the procedures established by the NTIA for this stage. Data includes line diagrams showing telecommunication links, proposed bands and bandwidth, orbit data, and detailed equipment characteristics to include all transmitters, receivers and antennas proposed for the system or spacecraft.

NTIA Responsibilities

Review the system and provide detailed comments on suitability of proposed bands for the system and the potential for interference to/from the proposed system. After completing its review, certify spectrum support for the system at subsequent stages of system development in accordance with its recommendations.

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STAGE TWO (EXPERIMENTAL) SYSTEM REVIEW DATA REQUIREMENTS

BACKGROUND: Certification of spectrum support at Stage 2 is a prerequisite for NTIA authorization of radiation in support of experimentation of the system. Experimentation may be required to determine suitable bands for further development of the system. NTIA data requirements increase at this stage. This review should be submitted to the NTIA no later than 3 years prior to operation or launch.

JPL Spectrum Management Responsibilities

Review with the project the NTIA comments/recommendations to the Stage 1 and incorporate as necessary into the Stage 2 package. In addition to updating the data previously sent to the NTIA, prepare Appendix 4 data required by the ITU for advance publication of the system (advance publication ensures international coordination is accomplished). One system that has used a Stage 2 certification for some years is the Airborne Synthetic Aperture Radar (AIRSAR) project.

NTIA Responsibilities

Review the system at the Stage 2 level to ensure that technical data is adequate for this level of review. Ensure that Stage 1 comments are addressed and complied with and, if the system does meet the Stage 2 requirements, certify to NASA its support at the Experimental level of review. Advise NASA what requirements must be fulfilled to ensure support at the next level of review. Review by the Space Systems Group (SSG) of the Appendix 4 data for accuracy and compliance with national and international radio regulations before transmittal to the ITU. Act as the focal point for the international coordination process.

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STAGE THREE (DEVELOPMENTAL) SYSTEM REVIEW DATA REQUIREMENTS

BACKGROUND: Certification of spectrum support at the Stage 3 level is a prerequisite for NTIA authorization of radiation in support of developmental testing for systems subject to these procedures. At this point, the intended frequency band will normally have been determined and certification at Stage 3 will be required for testing of proposed operational hardware and equipment configurations. This level of review is where a NASA/JPL spacecraft system review usually is initiated as opposed to the Stage 1 or Stage 2 levels. Requests for Stage 3 review should be submitted no later than 2-3 years prior to operation or launch.

JPL Spectrum Management Responsibilities

Review with the project the NTIA comments/recommendations to the Stage 2 review and incorporate as necessary into the Stage 3 review. In addition to updating the data previously sent to the NTIA with Stage 2, prepare Appendix 3 data required by the ITU to notify our intended use of the frequencies to the international community and for registration of the frequencies in the International Frequency Listing. Prepare frequency assignment requests for assignment of the frequencies in the U.S. Government Master File. Planning assignments will be put into the Government Master File, and will upgraded to operational assignments upon certification at the Stage 4 level of review.

NTIA Responsibilities

Review the system at the Stage 3 level to ensure that technical data is adequate for this level of review. Ensure that Stage 2 comments are addressed and complied with and, if the system does meet the Stage 3 requirements, certify support at this level. Coordinate the Appendix 3 data internally and forward to the Space Systems Group of the NTIA before transmittal to the ITU. Notify NASA of the results of the review to include requirements that must be met before certification can be obtained at the next level of review. Act as focal point during international coordination processes.

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STAGE FOUR (OPERATIONAL) SYSTEM REVIEW DATA REQUIREMENTS

BACKGROUND: Certification of spectrum support at the Stage 4 level is a prerequisite for NTIA authorization of radiation from a station with an operational station class (i.e., other than experimental) for systems that are subject to these procedures. It provides restrictions on the operation of the system or subsystem as may be necessary to prevent harmful interference. This level of review should be submitted approximately 12-18 months prior to operation or launch. At this level, there should be not changes in system design and very little effort is required at the NTIA.

JPL Spectrum Management Responsibilities

Review with the project the NTIA comments/recommendations to the Stage 3 review and incorporate as necessary into the Stage 4 review. At this stage in system development, there should be no further changes in system design/operation; therefore, preparation of the Stage 4 should be confined to confirming Stage 3 data. Monitor the international coordination processes and assignment of the operational frequencies in the U.S. data base.

NTIA Responsibilities

Review the system at the Stage 4 level to ensure that technical data is adequate for this level of review. Ensure that Stage 3 comments are addressed and complied with and, if the system does meet the Stage 3 requirements and, if the system does meet the Stage 4 requirements, certify support at this level. Ensure that the Appendix 4 and Appendix 3 submissions have been completed. Ensure that the frequency assignment request submitted with the Stage 3 review were completed. Act as the focal point for national/international coordination until these processes are completed.
paul.e.robbins@JPL.NASA.GOV